

ARGUMENTS

Claims 1 and 23-42 are pending. No claims stand allowed.

The drawings have been amended to correct minor errors noted in the Office Action and otherwise. These corrections are of a clerical nature and do not add "new matter".

The amendment also contains minor changes of a clerical nature. No "new matter" has been added by the amendment.

Objection to the Drawings

The Examiner has required new formal drawings based on a Draftperson's Review. Submitted herewith are corrected drawings. The Applicants respectfully request the objection to the drawings be withdrawn.

The 35 U.S.C. § 112 Rejection

Claims 27-31 and 33 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention.¹ The Examiner states:

Applicant states that the context barrier enforces security checks on at least one principle, object, and an action. It is unclear on the interpretation of this claim since claim 1 (parent claim) details the monitoring of communication between program modules. It is further examined that the program module is a principle or

¹ Office Action ¶ 2.

object. Applicant is requested to clarify if the examiner is correct in his assumption and amend the claims as such.²

With this Amendment, claims 27 and 33 have been amended to clarify the term “program modules”. Claims 28-31 depend from claim 27 and thus include this distinction. Accordingly, the Applicants respectfully request the 35 U.S.C. § 112 rejection to claims 27-31 and 33 be withdrawn.

The First Judicially-Created Double Patenting Rejection

Claims 1, 23-34 and 36-42 have been provisionally rejected pursuant to the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 30-48 of copending Application Serial No. 09/235,157.³ Submitted herewith is a terminal disclaimer in accordance with 37 CFR 1.321 (b) and (c). Withdrawal of this rejection is respectfully requested.

The Second Judicially-Created Double Patenting Rejection

Claim 35 has been provisionally rejected pursuant to the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claim 41 of copending Application Serial No. 09/235,157.⁴ Submitted herewith is a terminal disclaimer in accordance with 37 CFR 1.321 (b) and (c). Withdrawal of this rejection is respectfully requested.

² *Id.*

³ Office Action ¶ 4.

⁴ Office Action ¶ 5.

The Third Judicially-Created Double Patenting Rejection

Claims 1, 36, 38 and 41 been provisionally rejected pursuant to the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 18, 20 and 23 of copending Application Serial No. 09/235,158 in view of “Infrastructure of Multi-Application Smart Card” by Chan.⁵ Submitted herewith is a terminal disclaimer in accordance with 37 CFR 1.321 (b) and (c). Withdrawal of this rejection is respectfully requested.

The 35 U.S.C. § 102 Rejection

Claims 1 and 32-42 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by “Java Card 2.0 Programming Concepts” by Sun Microsystems, Inc.⁶ This rejection is respectfully traversed.

According to the M.P.E.P., a claim is anticipated under 35 U.S.C. § 102(a), (b) and (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.⁷ “The identical invention must be shown in as complete detail as contained in the claim.”⁸ “The elements must be arranged as required by the claim...”⁹

⁵ Office Action ¶ 6.

⁶ Office Action ¶ 7.

⁷ Manual of Patent Examining Procedure (MPEP) § 2131. See also *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

⁸ *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Contrary to the Examiner's statement, each and every element is not found in the cited reference. Furthermore, the various combinations of elements proposed by the Examiner are never arranged by the cited reference in the same manner as proposed by the Examiner or as required by the present claims.

Claim 1

Claim 1 recites:

A small footprint device comprising:

- a. at least one processing element,
- b. memory,
- c. a context barrier using said memory for isolating program modules from one another; and
- d. a global data structure for permitting one program module to access information from another program module across said context barrier.

The Examiner states:

As to claims 1, 32, and 34-42, SUN teaches a small footprint device (card) comprising: processing element; memory; context barrier (firewall) for isolating program modules from one another (applets); and a global data structure (virtual machine / JCRE) for permitting one program module to access information from another program module across the context barrier (pg. 7 - 8, Applet Isolation and Object Sharing).¹⁰

The Applicants respectfully disagree. Contrary to the Examiner's statement, the cited reference does not disclose a context barrier using said memory for isolating program modules from one another. Instead, the cited reference discloses "*an applet firewall prevents one applet from accessing the contents or behavior of objects owned by other applets.*"¹¹ The cited reference also states:

⁹ *Id.*

¹⁰ Office Action ¶ 8.

¹¹ Java Card 20. Programming Concepts, October 15, 1977, Sun Microsystems, Inc., § 2.7. (emphasis added)

Every object (class instance or array) on the card is owned by the applet which instantiated it, that is, the applet which was active at the time the object was created. The owning applet always has full privileges to use and modify the object.

The applet firewall ensures that no other applet may use, access, or modify the contents of an object *owned by another applet* except as described in this section. This does not restrict another applet from having a reference to such an object, but that applet cannot invoke methods on the object or get or set its field contents.¹²

The Applicants respectfully submit that the Examiner's attempt to equate an applet firewall that prevents an applet from accessing objects owned by other applets, with a *context* barrier for isolating program modules from one another, is improper. The Applicants also respectfully that the Examiner's attempt to equate "a global *data structure* for permitting one program module to access information from another program module across the context barrier" with "virtual machine / JCRE" is improper. Since these elements are not disclosed in the cited reference, the rejection is unsupported by the art and should be withdrawn.

Independent claims 32, 34, 35, 36, 38, 40, 41 and 42

Independent claims 32, 34, 35, 36, 38, 40, 41 and 42 include limitations similar to those of claim 1. Accordingly, the same arguments apply here.

Dependent Claims 37 and 39

Claims 37 and 39 depend from claims 36 and 38, respectively. The base claims being allowable, the dependent claims must also be allowable.

Claim 33

¹² *Id.* (emphasis added)

Claim 33 as amended recites:

The method of claim 32 wherein said program modules comprise at least one of a principal or an object and wherein the context barrier will not permit a principal to perform an action on an object unless both principal and object are part of the same context unless the request is for access to a global data structure.

The Examiner states:

As to claim 33, SUN teaches the context barrier will not permit a principle to perform an action on an object unless they are part of the same context (pg. 3, section 2.3, "The owning applet always has full privileges to use and modify the object.").¹³

The Applicants respectfully disagree. The cited reference does not disclose "... unless the request is for access to a global data structure." The Examiner is reminded that the mere absence from a reference of an explicit requirement of a claim cannot be reasonably construed as an affirmative statement that the requirement is in the reference.¹⁴ For this additional reason, the 35 U.S.C. § 103 is unsupported by the art and should be withdrawn.

The First 35 U.S.C. § 103 Rejection

Claims 23-31 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Java Card 2.0 Programming Concepts" by Sun Microsystems, Inc.¹⁵

This rejection is respectfully traversed.

According to the Manual of Patent Examining Procedure (M.P.E.P.),

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or

¹³ Office Action ¶ 8.

¹⁴ *In re Evanega*, 829 F.2d 1110, 4 USPQ2d 1249 (Fed. Cir. 1987).

¹⁵ Office Action ¶ 10.

references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.¹⁶

Claims 23, 25 and 27-31

The Examiner states:

As to claims 23, 25, and 27-31, SUN teaches isolating program modules by using a firewall. It would be obvious that each applications has separate memory / namespaces since the applications are separated by the firewall.¹⁷

The Applicants respectfully submit that the Examiner has provided insufficient evidence of obviousness. The Federal Circuit has stated:

When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness.¹⁸

The Court also advised the Patent and Trademark Office that simply saying that the basis for combining references comes from “common knowledge” or is “common sense” is insufficient:

The “common knowledge and common sense” on which the Board relied in rejecting Lee’s application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. ... The Board’s findings must extend to all material facts and must be documented on the record, lest the “haze of so-called expertise” acquire insulation from accountability. “Common knowledge and common sense,” even if assumed to derive from the agency’s expertise, do not substitute for authority when the law requires authority.¹⁹

¹⁶ M.P.E.P § 2143.

¹⁷ Office Action ¶ 10.

¹⁸ *In re Lee*, - F.3d -, -, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

¹⁹ *Id.* at -, 61 USPQ2d at 1434.

Thus, the Examiner's statement that "It would be obvious that each applications has separate memory / namespaces since applications are separated by the firewall" is insufficient evidence of obviousness. For this reason, the Applicants submit no prima facie case of obviousness has been established and the 35 U.S.C. § 103 rejection should be withdrawn.

The Applicants also submit the Examiner has not provided particular findings required for a 35 USC § 103 rejection. The Federal Circuit has warned against the use of broad conclusory statements:

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. In addition, the teaching, motivation or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. ... The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. ... Whether the Board relies on an express or an implicit showing, it must provide particular findings related thereto. *Broad conclusory statements standing alone are not "evidence."*²⁰

The statement "It would be obvious that each applications has separate memory / namespaces since applications are separated by the firewall"²¹ standing alone is not "evidence", as the Examiner has not provided particular findings related thereto. For this additional reason, the Applicants submit a prima facie case of obviousness has not been established and the 35 U.S.C. § 103 rejection should be withdrawn.

Additionally, claim 27 recites:

The small footprint device of claim 1 wherein said program modules comprise at least one of a principal or an object and wherein said context barrier enforces security checks on at least one of a principal, an object and an action.

²⁰ *In re Kotzab*, 217 F.3d 1370, 55 USPQ2d 1317 (Fed. Cir. 2000) (emphasis supplied).

²¹ Office Action ¶ 10.

These elements are not disclosed in the cited reference. For this additional reason, the 35 U.S.C. § 103 rejection is unsupported by the art and should be withdrawn. Claims 28-31 depend from claim 27. The base claim being allowable, the dependent claims must also be allowable.

Claims 24 and 26

Claims 24 and 26 depend from claims 23 and 25. The base claims being allowable, the dependent claims must also be allowable.

The Second 35 U.S.C. § 103 Rejection

Claims 1 and 23-42 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over “Infrastructure of Multi-Application Smart Card” by Chan in view of “Designers Offered First 16-bit Smart Card IC Architecture With Development Tools” by Philips.²² This rejection is respectfully traversed.

Contrary to the Examiner’s statement, each and every element is not found in the cited references. Furthermore, the various combinations of elements proposed by the Examiner are never arranged by the cited references in the same manner as proposed by the Examiner or as required by the present claims.

Claim 1

Claim 1 recites:

²² Office Action ¶ 11.

A small footprint device comprising:

- a. at least one processing element,
- b. memory,
- c. a context barrier using said memory for isolating program modules from one another; and
- d. a global data structure for permitting one program module to access information from another program module across said context barrier.

The Examiner states:

As to claims 1, 32, and 34-42, CHAN teaches a small footprint device (multi-application smart card) comprising: at least one processing element; memory (pg. 1, introduction); and a global data structure (shared common security module / unique identification module) for permitting one program module to access information from another program module (applications / biometric module) (pg. 4-10, figure 7, figure 10). However, CHAN does not explicitly mention a context barrier.²³

The Examiner also states:

PHI LIPS teaches a smart card having a context barrier for isolating program modules from one another (pg. 1, "Based on a unique smart card hardware firewall which isolates different applications from each other, SmartXA ensures secure and safe handling of several applications from different service providers on a single card."). Chan teaches the applications communicate with each other through a security module / identification module and therefore it would be obvious that the addition of Philips to Chan would allow one to communicate across the firewall. Therefore, it would be obvious to combine the teachings of CHAN with the teachings of PHILIPS in order to facilitate security and reliability of the card program (pg.1).²⁴

The Applicants respectfully disagree. Contrary to the Examiner's statement, the cited reference does not disclose a *context barrier* for isolating program *modules* from one another. Instead, the cited reference discloses:

²³ Office Action ¶ 11.

²⁴ Office Action ¶ 11.

Based on a unique smart card hardware firewall which isolates different applications from each other, SmartXA ensures secure and safe handling of several applications from different service providers on a single card.²⁵

The Applicants respectfully submit that the Examiner's attempt to equate "context barrier for isolating program modules" with "unique smart card hardware firewall" is improper. Since these elements are not disclosed in the cited reference, the rejection is unsupported by the art and should be withdrawn.

Claims 32, 34, 35, 36, 38, 40, 41, 42

Claims 32, 34, 35, 36, 38, 40, 41 and 42 include limitations similar to claim 1. Accordingly, the arguments for claim 1 apply here as well. Claim 1 being allowable, claims 32, 34, 35, 36, 38, 40, 41 and 42 must also be allowable.

Claims 23-31, 33, 37 and 39

Claims 23-31 depend from claim 1. Claims 33, 37 and 39 depend from claims 32, 36 and 38, respectively. The base claims being allowable, the dependent claims must also be allowable.

Claims 23, 25 and 27-31

The Examiner states:

As to claims 23, 25, and 27-31, PHILIPS teaches the firewall separates each program module (pg. 1). It would be obvious that each applications has separate memory / namespaces since the applications are separated by the firewall.²⁶

²⁵ *Designers Offered First 16-Bit Smart Card IC Architecture With Development Tools*, Philips Semiconductors Press Release, September 21, 1998.

²⁶ Office Action ¶ 11.

The Applicants respectfully submit that the Examiner has provided insufficient evidence of obviousness. The Federal Circuit has stated:

When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness.²⁷

The Court also advised the Patent and Trademark Office that simply saying that the basis for combining references comes from “common knowledge” or is “common sense” is insufficient:

The “common knowledge and common sense” on which the Board relied in rejecting Lee’s application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. ... The Board’s findings must extend to all material facts and must be documented on the record, lest the “haze of so-called expertise” acquire insulation from accountability. “Common knowledge and common sense,” even if assumed to derive from the agency’s expertise, do not substitute for authority when the law requires authority.²⁸

Thus, the Examiner’s statement that “It would be obvious that each applications has separate memory / namespaces since applications are separated by the firewall”²⁹ is insufficient evidence of obviousness. For this reason, the Applicants submit no prima facie case of obviousness has been established and the 35 U.S.C. § 103 rejection should be withdrawn.

The Applicants also submit the Examiner has not provided particular findings required for a 35 USC § 103 rejection. The Federal Circuit has warned against the use of broad conclusory statements:

²⁷ *In re Lee*, - F.3d -, -, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

²⁸ *Id.* at -, 61 USPQ2d at 1434.

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved. In addition, the teaching, motivation or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. ... The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. ... Whether the Board relies on an express or an implicit showing, it must provide particular findings related thereto. *Broad conclusory statements standing alone are not "evidence."*³⁰

The statement "It would be obvious that each applications has separate memory / namespaces since applications are separated by the firewall"³¹ standing alone is not "evidence", as the Examiner has not provided particular findings related thereto. For this additional reason, the Applicants submit a prima facie case of obviousness has not been established and the 35 U.S.C. § 103 rejection should be withdrawn.

Additionally, claim 27 recites:

The small footprint device of claim 1 wherein said program modules comprise at least one of a principal or an object and wherein said context barrier enforces security checks on at least one of a principal, an object and an action.

These elements are not disclosed in the cited reference. For this additional reason, the 35 U.S.C. § 103 rejection is unsupported by the art and should be withdrawn. Claims 28-31 depend from claim 27. The base claim being allowable, the dependent claims must also be allowable.

Claims 24 and 26

Claims 24 and 26 depend from claims 23 and 25. The base claims being allowable, the dependent claims must also be allowable.

²⁹ Office Action ¶ 11.

³⁰ *In re Kotzab*, 217 F.3d 1370, 55 USPQ2d 1317 (Fed. Cir. 2000) (emphasis supplied).

³¹ Office Action ¶ 11.

Claim 33

Claim 33 depends from claim 32. The base claim being allowable, the dependent claim must also be allowable.

The Examiner states:

As to claim 33, It is well known in the art that a firewall allows communicate between programs within the same memory space or context.³²

The Applicants submit the Examiner has impermissibly engaged in hindsight construction. The Federal Circuit has repeatedly warned against the use of hindsight construction:

A critical step in analyzing the patentability of claims pursuant to 103(a) is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. ... Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one “to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.”³³

Additionally, the M.P.E.P. states:

The examiner must step backward in time and into the shoes worn by the hypothetical ‘person of ordinary skill in the art’ when the invention was unknown and just before it was made ... the examiner must put aside knowledge of the applicant’s disclosure, refrain from using hindsight, and consider the subject matter claimed “as a whole.”³⁴

The Examiner’s statement that “It *is* well known in the art that a firewall allows communicate between programs within the same memory space or context” indicates the

³² Office Action ¶ 11.

³³ *In re Kotzab*, 217 F.3d 1369, 55 USPQ2d 1316 (Fed. Cir. 2000) (citations omitted).

³⁴ *Id.*

Examiner failed to step backward in time and into the shoes worn by a person of ordinary skill in the art when the invention was unknown and just before it was made in determining whether the Applicant's invention is rendered obvious under 35 U.S.C. § 103. This is hindsight construction. For this reason, the Applicants submit no prima facie case of obviousness has been established and the 35 U.S.C. § 103 rejection should be withdrawn.


In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Request for Allowance

It is believed that this Response places the above-identified patent application into condition for allowance. Early favorable consideration of this application is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Respectfully submitted,
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Dated: December 02, 2002

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Version With Markings To Show Changes Made

27. (Amended Once) The small footprint device of claim 1 [in which] wherein said program modules comprise at least one of a principal or an object and wherein said context barrier enforces security checks on at least one of a principal, an object and an action.
33. (Amended Once) The method of claim 32 [in which] wherein said program modules comprise at least one of a principal or an object and wherein the context barrier will not permit a principal to perform an action on an object unless both principal and object are part of the same context unless the request is for access to a global data structure.